

3. The segment of claim 1, wherein the polymorphic form occupying the polymorphic site is an alternative form listed in Table 1, column 2, or 4-11.

4. (Amended) An allele-specific oligonucleotide that hybridizes to a segment of human mitochondrial nucleic acid or its complement including a polymorphic site shown in Table 1, column 1 wherein the polymorphic site within the segment is occupied by a base other than the base shown in Table 1, column 3 ("asn base").

5. The allele-specific oligonucleotide of claim 10 that is probe.

6. The allele-specific oligonucleotide of claim 10, wherein a central position of the probe aligns with the polymorphic site of the fragment.

7. The allele-specific oligonucleotide of claim 10 that is a primer.

8. (Amended) The allele-specific oligonucleotide of claim [13] 7, wherein the 3' end of the primer aligns with the polymorphic site of the fragment.

9. (Amended) An isolated nucleic acid comprising [a segment of the human mitochondrial sequence described by Anderson et al., *Nature* 290, 457-465 (1981)] SEQ ID NO: 30, or the complement thereof, including a polymorphic site shown in Table 1, column 1, wherein the polymorphic site within the segment is occupied by a base other than the base shown in Table 1, column 3 ("asn base").

10. (Amended) A method of analyzing a nucleic acid, comprising:
obtaining the nucleic acid from an individual; and
determining whether a base occupying any one of the polymorphic sites shown in Table 1 is a base other than the base shown in Table 1, column 3 ("asn base").

Please add the following new claims:

11. A segment of human mitochondrial DNA or RNA of between 10 and 100 bases including any one of the polymorphic sites shown in Table 1 or the complement of the segment, except those polymorphic sites which are indicated in column 1 to be at position: 6427, 6463, 6497, 6542, 6544, 7207, 7705, 7711, 7848, 7858, 7866, 7929, 7974, 80822, 9511, 9512, 9513, 10016, 10017 and 10018.

12. The segment of claim 11, wherein the polymorphic form occupying the polymorphic site is listed in Table 1, column 3.